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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,869	12/11/2003	Jaeho Kim	GUID.045PA (01-140)	8095

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EXAMINER
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EVANISKO, GEORGE ROBERT

ART UNIT	PAPER NUMBER
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3762

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/733,869

Applicant(s)

KIM ET AL

Examiner

George R. Evanisko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-17, 19-22, 24-35, 37, 39-49, 51-55, 57, 59-62, 64, 66-69, 71-84, 86, 87, 89-94 is/are rejected.
- 7) ☒ Claim(s) 5, 18, 23, 36, 38, 50, 56, 58, 63, 65, 70, 85 and 88 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/8/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-5, 22, 51, 64-66, 71, 80, 83, 88, and 89 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3-5, “wherein defining...comprises defining one or more classification windows” is vague and conflicts with claim 1 since claim 1 says there is a plurality of windows. It is suggested to state “two or more...”.

In claims 22, 51, 71, and 83, “near non capture” is vague since it is unclear what a near non-capture is and what effect a near non capture will have on the threshold adjustments. Is it a capture, a non-capture, or something else? The examiner has interpreted it to be a capture since it is not a non capture.

In claim 61, “is about 50% of a captured response template peak” is vague since the template peak is a relative peak.

In claims 64-66, in the last line, “the first”, “the second”, and “the third” classification window lack antecedent basis.

In claim 80, “are adaptable” makes the claim incomplete for omitting an element to make the references adaptable. The claim has not set forth what element is used to make them adaptable.

In claim 88, “a first classification window” and the second and third windows are inferentially included and it is unclear if the windows are being positively recited or functionally recited. It is suggested to first state that the system has 3 windows.

In claim 89, “the first, second, and third classification windows” lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 6-9, 13, 14, 16, 17, 19-22, 24, 25, 59, 60-62, 64, 66, 73, 75, 78-84, 90, and 94 are rejected under 35 U.S.C. 102(b) as being anticipated by Schroepel (5431693).

Schroepel shows in figures 8 and 9 and discusses in columns 6-8 the use of two windows, one over 40-70 ms, and the second over 70-100 ms to classify the response based on a peak of a second derivative (the slope) of the cardiac signal.

Claims 1, 3, 4, 6-9, 12, 16, 17, 19, 20, 22, 39, 41-44, 46-49, 51, 73-76, 78-83, 86, 87, 90, 92, and 93 are rejected under 35 U.S.C. 102(e) as being anticipated by Rueter et al (7027868). Rueter discusses in columns 10-12 and figure 8 the use of three windows, 86, 88, and 90, to classify the AVC threshold test over 2 of 3 cycles and by delivering an atrial pulse and sensing in the ventricle and using either high to low or low to high pulses (column 8, line 53-65).

Claims 1, 3, 4, 6-9, 13, 14, 16, 17, 19, 20, 22, 39, 41-43, 47-49, 51, 59, 73, 75, 78-83, 86, 87, 90, and 92-94 are rejected under 35 U.S.C. 102(e) as being anticipated by Vonk (2002/0183798). Vonk discloses in figures 9A and 9B and in paragraphs 75-88 the use of two non-overlapping windows, how the windows are dynamically adjusted, and how the threshold search is conducted using a FFRW peak (paragraph 65).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 39, 41-43, 48, 49, 51, 52, 53, 92, and 93 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schroepfel. Schroepfel states in column 1 that the system will dynamically/automatically adjust the stimulation energy so that capture is successful and therefore will apply the system/method over several pacing cycles using different energy levels until capture is assured.

In the alternative, Schroepfel discloses the claimed invention except for using the system/method over several pacing cycles (a sequence of pacing cycles) using different energy levels. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the capture system and method as taught by Schroepfel, with using the system over several pacing cycles using different energy levels since it was known in the art that capture systems and methods operate over a sequence of several pacing cycles using different energy levels in order to adjust the stimulation energy to safely capture the heart using the lowest possible energy.

Claims 2, 40, 77, and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroepfel, Rueter, or Vonk. Schroepfel, Rueter, or Vonk discloses the claimed invention except for the detection of cardiac noise and canceling classification based on the noise. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cardiac system and method as taught by Schroepfel, Rueter, or Vonk, with the detection of cardiac noise and canceling classification based on the noise since it was known in the art that cardiac systems and methods use detection of cardiac noise and cancel the classification based on the noise so that the system does not falsely detect noise as a cardiac signal and incorrectly adjust the system based on the noise data.

Claims 10, 11, 15, 26-35, 37, 45, 52-55, 57, 67, 68, 69, 71, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroepfel, Reuter, or Vonk. Schroepfel, Reuter, or Vonk disclose the claimed invention except for the use of capture, evoked, non-capture, intrinsic templates using captured response beats or intrinsic beats as the template and updating the template, and the peak width, peak amplitude, peak time, or curvature for classifying the signal

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as capture, evoked, non-capture, intrinsic, by comparing it to a reference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the capture/threshold system and method as taught by Schroepel, Reuter, or Vonk, with the use of capture, evoked, non-capture, intrinsic templates using captured response beats or intrinsic beats as the template and updating the template, and the peak width, peak amplitude, peak time, or curvature for classifying the signal as capture, evoked, non-capture, intrinsic, by comparing it to a reference since it was known in the art that capture/threshold systems and methods use: the use of capture, evoked, non-capture, intrinsic templates using captured response beats or intrinsic beats as the template and updating the template to provide a system/method that reduces processing to clearly distinguish and accurately match the sensed cardiac signal to a determined condition of the heart, and that periodically updates and creates the templates to match the current state of the patients heart; and the peak width, peak amplitude, peak time, or curvature for classifying the signal as capture, evoked, non-capture, intrinsic, by comparing it to a reference to allow the system/method to use conventional and tested morphological parameters to correctly detect the capture, non-capture, intrinsic, or evoked state of the heart due to the pacing pulse.

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. In addition, the prior art previously cited or in the information disclosure statements show several examples of many of the well known in the art elements/steps discussed in the 103 rejections.

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***Allowable Subject Matter***

Claims 5, 18, 23, 36, 38, 50, 56, 58, 63, 65, 70, 85, and 88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Evanisko whose telephone number is 571 272 4945. The examiner can normally be reached on M-F 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 571 272 4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

George R Evanisko  
Primary Examiner  
Art Unit 3762

8/20/06

GRE  
August 20, 2006